

The Impact of Online Game Addiction on Student's Attention

Aryani Pamukti¹, Fathul Lubabin Nuqul², Shinta Nuriya Idatul Alfain³, Rohmatul Hannani⁴

^{1,2,3,4}Pascasarjana Psikologi, Universitas Islam Negeri Malang

^{2,3}Ilmu Komunikasi, Universitas Darussalam Gontor

Jl. Raya Siman, Ponorogo, Jawa Timur, Indonesia

¹aryanipamukti@unida.gontor.ac.id,

Abstrak

In general, research on online game addiction only focuses on children or adolescents whose learning patterns still need to be better managed by themselves and their environment. However, this research focuses on students who are expected to have more regular learning patterns. This is because not all students have academic achievements that are as expected. Some students who come to class play online games with laptops or gadgets. This study aims to determine online game addiction among students, determine the level of attention among students, and the influence of online game addiction among students. This study uses a quantitative approach. The subjects of this research are santri students who have active status in Islamic boarding school-based Islamic boarding schools. Data collection in this study used an online game addiction scale and the Stroop test to measure attention. The analysis test in this study used the help of the R program. Based on the hypothesis test using the R program, it shows that online game addiction has a significant effect on the attention of students. The results of research data analysis show that students who get high online game addiction scores have low attention scores. On the other hand, students who have low online game addiction scores have high attention scores. The results of this study prove that there is an influence of online game addiction on attention. One way to increase attention so that students do not become addicted to online games is by replacing students' energy or energy substitution, for example with sports activity programs.

Keywords: Online Game Addiction; Attention; Santri Students

Diterima: 09-08-2023

Disetujui: 24-08-2023

Dipublikasikan: 30-01-2024

INTRODUCTION

The university is a place for students to excel academically and non-academically. Not all students have the academic achievement that is expected. This can be proven by the number of students who drop out in the middle of their studies. Study failure can also be indicated by the achievement of competence in class. Data at the BAA of Islamic Higher Education, based on Islamic boarding schools, shows that in the 2021-2022 academic year, there were 43 students who had to drop out due to being unable to complete their studies. As for student competency, it can be seen from the average GPA of 2.75, and based on the results of interviews with one of the lecturers, most of the students who drop out are students who don't pay attention when in class (Zarkachi, interview, 03 September 2022, Li, 2020). The student who wasn't paying attention inside because his attention was turned to the game on his gadget. Some of the students who enter the class play online games with their laptops or gadgets under the pretext of paying attention when the lecturer is delivering material (Li, 2020).

Students who are proven to be playing games will usually be expelled from outside the classroom, but this does not necessarily deter students; in fact, there are still many students who are caught playing games in class when lecturers are teaching (Rahayu, interview, 03 September 2022). Even though paying attention when a teacher teaches is an obligation for a student (Imanniar et al., 2021). This situation is the effect of the many stimuli that exist within students (Mukti & Wimbari, 2020). When students are unable

to select a stimulus that must be responded to properly, it has an impact on decreasing their ability to pay attention in the teaching and learning process (Cardoso-Leite et al., 2021). The ability to choose a particular stimulus to match the capacity of the brain is known as attention (Johnson, 2004). This is what makes attention an important factor in increasing the effectiveness of learning. Learning requires an ideal and maximum brain work process through concentration of attention.

Students who experience online game addiction will find it difficult to pay attention to the learning process. Thursina et al. suggested that there is a relationship between internet gaming disorder and attention and memory disorders in junior high school students in rural areas in Yogyakarta (Thursina et al., 2021). The results of Thursina's research (2021) are in line with the research of Mahalingham, Howell, & Clarke, which revealed that there is a relationship between the use of social media and psychological distress moderated by attention control (Mahalingham et al., 2022). Cardoso-Leite et al. explained that there is a relationship between the use of media, attention, mental health, and academic achievement in children aged 8-12 years (Cardoso-Leite et al., 2021). Kokoç's research results show that there is a significant role of attention control as a mediating variable in the relationship between multitasking and social media and academic achievement among adolescents (Kokoç, 2021). The results of research conducted by Dangwon Choi (2022) show that the level of smartphone addiction has a correlation with levels of physical activity, quality of sleep, attention learning, and self-

regulated learning (Choi, 2022). Based on several studies that have been carried out to show that there is a relationship between online game addiction and attention .

In general, research on online game addiction only focuses on children or adolescents whose learning patterns are still not well organized. However, this research focuses on students who are expected to have a more regular learning pattern. So it is necessary to know the relationship between online game addiction in students and attention , especially students who live in dormitories or santri students.

THEORETICAL STUDY

Addiction or addiction in the psychological dictionary is defined as physical dependence on an anesthetic drug; this addiction increases tolerance for drugs, physical and psychological dependence, and increases self-isolation from society when the drug is discontinued, usually used in clinical contexts and refined by excessive behavior (Chaplin , 2011). Yee (2007) explains addiction is an unhealthy behavior that is difficult for the individual concerned to stop or end, which will have a negative impact on the individual himself and others.

Online games are games that can be accessed by many players, where the machines used by players are connected to an internet network (Adams & Rollings , 2010). Online games are game applications that consist of several genres that have certain rules and levels. Playing online games gives a sense of curiosity and psychological satisfaction, so it makes players more interested in playing them.

Addiction to online games is known as game addiction (Grant and Kim, 2003). This means that a player is excessive, as if he has nothing to do but play games and as if this game is his life, and has a negative influence on the players (Weinstein, 2010). Addiction to online games is a form of addiction caused by internet technology or what is known as internet addictive disorder (Angela, 2013). So it can be concluded that online game addiction is a situation when an individual cannot stop the urge within himself to play games.

Online game addiction is one of the psychiatric problems included in the DSM-5-TR (APA, 2022). The higher the tendency level of someone's online game addiction indicates that the individual is more addicted to online games or shows the symptoms that occur in people with online game addiction. The tendency level of online game addiction is measured using an adaptation of the online game addiction scale which is based on 9 aspects of online game addiction according to the diagnostic criteria in the DSM-V (Lemmens et al., 2015) . The 9 aspects of online game addiction are as follows: 1) Preoccupation . Preoccupation is related to being too engrossed in playing games and spending a lot of time thinking or fantasizing about games. 2) tolerance. Tolerance is characterized by increasing the amount of time spent playing in order to experience the desired effect (e.g., joy, satisfaction). 3) Withdrawal . There are symptoms that appear when unable to play or trying to reduce or stop the game. Symptoms usually involve feelings of restlessness, annoyance, anger, frustration, anxiety, or sadness. 4) persistence. Having a strong desire to play the game or a

failed attempt to stop, control or reduce the game. 5) Escape. Playing games is an escape behavior, relieving negative mood states, such as helplessness, guilt, anxiety, or depression. 6) Problems. This criterion refers to continuous play despite being aware of the negative consequences of this behavior interfering with the important things in life. 7) Deception . Individuals lie to others or cover up the extent of their gaming behavior. 8) Displacements . Gaming behavior predominates, resulting in reduced social and other activities conflict. 9) It reflects more substantial problems as a result of play, referring to the loss, or near loss, of important relationships or opportunities related to school or work..

When playing games, a person needs special attention and focus. Someone who is addicted to online games will find it difficult to share their attention with other things (Hawi et al., 2018). Attention is a concentration of mental activity that makes individuals take in information from several incoming information simultaneously (Johnson, 2004). Attention is formed from a certain system that can be divided based on brain structure, which consists of three parts, namely the alertness, orientation and executive control networks (Sinha et al., 2022). There are four types of attention used in everyday life: attention, focused attention, sustained attention, and executive attention (Baghdadi et al., 2021). In Broadbent's theory, individuals will filter information when the information is received/registered in the sensory section. Various stimuli can reach the filtering stage in the sensory section, but only one piece of information passes through the filter to be processed into attention (Mole, 2019).

Attention is the concentration of mental activity that makes individuals take information from several incoming information simultaneously. Information is obtained from sensing, memory and other cognitive processes. When someone has a high attention control score, then that individual has the ability to pay attention and understand lessons well. Attention in this study was measured using The Stroop Color and Word Test (SCWT) (Savaş et al., 2020). The Stroop task is one of the most popular types of psychological tests. The stroop task can test cognitive abilities and decision-making when the brain's level of distraction is high. In the Stroop task, the writing that is read and seen will not necessarily have the same color, the difference in color between the writing that is seen and read in the Stroop task will produce a level of interference in the brain.

RESEARCH METHOD

This study uses a quantitative approach. This study aims to describe the level of online game addiction in terms of attention control (descriptive) and also want to know the effect of online game addiction in terms of attention . Based on these objectives, the type of research used is research. Descriptive research is research that aims to describe an event. While comparative research aims to compare the similarities and differences of a symptom and a problem that exists now (Arikunto, 2019)

The subjects of this study were students with active status at Darussalam Gontor University. Students who were used as subjects in this study were students

who lived on the Men's Campus. The selection of students at the Men's Campus is because students who have access to using smartphones are the only students at the Men's Campus. Male students who have played online games are the criteria in this study. The sex of the subjects in this study was male, with an age range of 18-25 years. Students who were the subject of this study were active students in semesters 2, 4, 6, and 8. Sampling in this study used a cluster random sampling technique.

Collecting data in this study using a psychological scale. The scale model used in this study is the Guttman scale. The Guttman scale is a scale used to get firm answers from respondents in this study using a scale with the choice "yes or no" (Sugiyono, 2017). The scale used in this study is the online game addiction scale to measure the level of online game addiction among students. The scale in this study is an adaptation of an existing scale, namely The Internet Game Disorder Scale by Lemmens et al. (2015). While attention is measured through the Stroop Task. The scale was created via the Google form, then distributed via WhatsApp messages to research respondents who matched the criteria in the study.

The online game addiction scale in this study is an adaptation of an existing scale, namely The Internet Game Disorder Scale by Lemmens et al. (2015). Item analysis on the online game addiction scale uses the R program. The item analysis results show that there are 23 items that can be used from the initial 27 items, with coefficient values ranging from 0.115 to 0.787. The results of the reliability test of the game addiction scale obtained a result of 0.897; this indicates that the online game

addiction scale is reliable for measuring online game addiction. The following is a representation of the items in each aspect of the online game addiction scale used in this study.

Table 1. Variable Items of Online Game Addiction

Aspect	Aitem
<i>Preoccupation</i>	Do you think about games all the time?
<i>tolerance</i>	Are you feeling dissatisfied because you want to play more games?
<i>Withdrawals</i>	Do you feel restless when you can't play games?
<i>persistence</i>	Can you reduce your gaming time?
<i>Escape</i>	Do you play games to forget your problems?
<i>Problems</i>	Have you ever skipped class because of playing games?
<i>Deception</i>	Do you play games under the pretext of doing assignments?
<i>Displacements</i>	Do you prefer playing games to interacting with other people?
<i>conflict</i>	Have you ever had problems on campus because of playing games?

After knowing the scores of all respondents on each variable, then categorization is carried out. The purpose of this categorization is to place individuals into separate groups in stages according to a continuum based on the attributes being measured (Azwar, 2010). After the data was

collected, it was analyzed using regression analysis to determine the contribution of the independent variable, namely online game addiction and the dependent variable, namely attention control. The analysis test in this study used the help of the R Program.

Meanwhile, attention is measured by the Stroop task (Savaş et al., 2020). In doing the Stroop task, the respondent is given one minute to answer the question. There are 30 color words, and the respondent chooses the answer that correctly shows the color of the text, regardless of the meaning of the word color itself. The faster you answer correctly, the higher a person's attention will be; on the other hand, people with attention disorders will be slower to answer but will also have a much higher rate of wrong answers. All instruments were made via Google form with the addition of a timer feature on the Stroop task, then distributed via WhatsApp messages to research respondents who matched the criteria in the study.

The interpretation of the attention control score using the Stroop task is by dividing the number of correct answers by the number of all answers, then adding the working time divided by the finishing time, the result of the score is then multiplied by ten and rounded up to two numbers. As the following formula:

$$AC = \left(\frac{d}{D}\right) + \left(\frac{T}{t}\right)$$

AC = attention control

d = correct answer

D = total of all answers

t = time to complete work

T = working time

After knowing the scores of all respondents on each variable, then categorization is carried out. The purpose of this categorization is to place individuals into separate groups in stages according to a continuum based on the attributes being measured (Azwar, 2010). Respondents' answer scores were divided into three categories, namely high, medium, and low. The norms used in determining categorization using Azar's theory (2010) are as follows.

Table 2. Categorization Norms

Formula	Categorization
$(M + 1,00s) \leq X$	Tall
$(M - 1,00s) \leq X < (M + 1,00s)$	Enough
$X < (M - 1,00s)$	Low

Information:

M : Means

s : Standard Deviation

X : Score in each variable

After the data was collected, it was then analyzed using regression analysis to determine the contribution of the independent variable, namely online game addiction, to the dependent variable, namely attention. The analysis test in this study used the help of the R Program. Descriptive analysis was carried out by looking at the results of respondents' answers to the variables of online game addiction and attention.

RESULTS AND DATA EXPOSURE

Descriptive analysis can be done by looking at the results of respondents' answers to the online game addiction variable and

attention . Respondents in this study were santri students who lived on the male campus. Based on the results of the respondents' answers via the Google form, the following results were obtained:

Table 3. Descriptive Statistics

Variable	N	Min	Max	Means	Median	SD
Age	50	18	25	21.36	21	1.70
Online Game Addiction	50	1	22	7.96	6	5.65
Attention Control	50	15	38	25.84	26	5.76

Based on these data, it can be seen that the respondents in this study were aged between 18-25 years with an average age of 21 years. The online game addiction variable has an average response value of 7.96 with a minimum value of 1 and a maximum value of 22, and a standard deviation of 5.65. While the attention variable has a minimum value of 15 and a maximum value of 38, with an average value of 25.84 and a standard deviation of 5.75. Based on the results of these calculations, then carried out categorization. The following is the categorization of online game addiction variables and attention.

Table 4. Categorization

Variable	N	Tall	Currently	Low
Online Game Addiction	50	9 18%	37 74%	4 8%
Self Regulated Learning	50	10 20%	29 58%	11 22%
Attention Control	50	10 20%	31 62%	9 18%

Based on the results of this categorization, it can be seen that 18% of santri students have a high addiction level, 74% of santri students have a moderate addiction level, and 8% of santri students have a low online game addiction level. The attention control ability of santri students at a low level is 18%, at a medium level is 62%, and at a high level is 20%. Based on

the results of this categorization, it can be concluded that most of the santri students have an online game addiction level, and attention control is in the medium category.

The hypothesis test in this study used the R program. The influence of the online game addiction variable (x) on the attention variable (y) results are as follows:

Table 5. Regression of Online Game Addiction (x) to Attention Control Variables (y)

	Estimates	Std Er	t-value	p-values	Lower 95%	Upper 95%
Intercepts	30,818	1.133	27,212	0.000	28,541	33,095
Online Game Addiction	-0.625	0.116	-5,373	0.000	-0.859	-0.391
R-squared	Adjusted R-squared		PRESS R-squared			
	0.376		0.363		0.320	
The null hypothesis of all 0 population slope coefficients :						
F-statistics: 28,871	df: 1 and 48		p-value: 0.000			

Based on these results, it can be seen that the attention regression equation = $30.0818 + 0.625$ online game addiction. $F(1, 48) = 28.871$, $p < 0.01$ with $R^2 = 0.363$ indicates that the regression model can be explained properly. The variance of attention can be explained by the online game addiction variance of 36.3%; the rest is influenced by other factors of 62.7%. So it can be seen that online game addiction has an influence on attention control. From the results of the analysis above, it can be seen that the hypothesis is accepted that there is an influence of online game addiction on attention.

Based on hypothesis testing using the R program shows that online game addiction significantly influences attention. The results of the research data analysis show that students who get high online game addiction scores have low attention scores. Conversely, students who have low online game addiction scores have high attention scores. This proves that there is

an influence of online game addiction on attention.

Santri students who were respondents in this study were, on average, 21 years old. Erikson stated that the age of 20-30 years entered into the stage of early adulthood (Alwisol, 2009). In the early adult stage, an individual is expected to be able to understand his own identity and know what he wants. However, in reality, many santri students still enjoy the playing phase and forget their obligations and responsibilities. This, of course, will disrupt the learning process, both academic and non-academic, of the student concerned. So we need a solution related to this problem.

Many students have a moderate level of online game addiction; this is, of course, worrying for the university if it is not addressed because it can increase too high. Online game addiction among students has a significant influence on attention. If students have a high level of online game addiction, students' attention will tend to be low. When a student's attention is low, it will be difficult for students to accept or learn new things (Nugroho et al., 2022). A student who is difficulty accepting or learning new things certainly will not make the student a student capable of being innovative, and responsive in both academic and non-academic processes. This is inconsistent with the function of higher education as attached to Law number 12 of 2012 concerning Higher Education article 4b, namely to develop academics who are innovative, responsive, creative, skilled, competitive and cooperative.

Universities, as one of the providers of higher education, are able to implement increasing the attention of santri students

as a way to reduce online game addiction. One form of increasing attention that can be carried out by the University to reduce online game addiction is by carrying out energy replacement or energy substitution for students who experience online game addiction. Several forms of energy substitution that can be programmed by the University include providing activities outside of learning hours through sports activities, sports have been proven to be able to increase students' attention (Meiliani et al., 2017).

KESIMPULAN

Online game addiction has a negative influence on direct attention . Universities, as providers of higher education, are expected to be able to provide services to students to increase attention in order to achieve the functions of higher education.

For future researchers, it is expected to be able to involve two or more subjects with different criteria so that they can see the diversity that exists in each individual. In addition, further researchers can conduct research by adding other variables that can be tested for their influence as mediating and moderating variables to increase attention to students who experience online game addiction so as to increase the diversity of solutions related to online game addiction in students.

REFERENCE

- Alwisol. (2009). *Psikologi Kepribadian*. UMM Press.
- Azwar, S. (2010). *Penyusunan Skala Psikologi*. Pustaka Pelajar.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological

- research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. <https://doi.org/10.1037//0022-3514.51.6.1173>
- Cardoso-Leite, P., Buchard, A., Tissieres, I., Mussack, D., & Bavelier, D. (2021). Media use, attention, mental health and academic performance among 8 to 12 year old children. *PLOS ONE*, 16(11), e0259163. <https://doi.org/10.1371/JOURNAL.PONE.0259163>
- Choi, D. (2022). Physical Activity Level, Sleep Quality, Attention Control and Self-Regulated Learning along to Smartphone Addiction Among College Students. *Journal of the Korea Academia-Industrial Cooperation Society*, 16(1), 429–437. <https://doi.org/https://doi.org/10.5762/KAIS.2015.16.1.429>
- Hawi, N. S., Samaha, M., & Griffiths, M. D. (2018). Internet gaming disorder in Lebanon: Relationships with age, sleep habits, and academic achievement. *Journal of Behavioral Addictions*, 7(1), 70–78. <https://doi.org/10.1556/2006.7.2018.16>
- Imanniar, A. liana C., Sitika, A. J., & H, C. S. (2021). Etika Peserta Didik kepada Guru Perspektif K.H. Hasyim Asy'ari (Kajian Teoritik Kitab Adab al-'Alim wa al-Muta'allim). *Edumaspul: Jurnal Pendidikan*, 5(2), 498–508. <https://doi.org/10.33487/EDUMASPUL.V5I2.1762>
- Indonesia, G. of. (2012). Undang Undang Republik Indonesia Nomor 12 Tahun 2012. In *Republik Indonesia* (Vol. 3, Issue September). <https://peraturan.bpk.go.id/Home/Details/39063/uu-no-12-tahun-2012>
- Irwandi, D., Masykur, R., & Islam Negeri Raden Intan Lampung, U. (2021). KORELASI KECANDUAN MOBILE LEGENDS TERHADAP PRESTASI BELAJAR MAHASISWA. *Jurnal Lebesgue : Jurnal Ilmiah Pendidikan Matematika, Matematika Dan Statistika*, 2(3), 292–299. <https://doi.org/10.46306/LB.V2I3.87>
- Johnson, A. and R. W. P. (2004). *Attention, Theory and Practice*. SAGE Publications Inc.
- Kokoç, M. (2021). The mediating role of attention control in the link between multitasking with social media and academic performances among adolescents. *Scandinavian Journal of Psychology*, 62(4), 493–501. <https://doi.org/10.1111/sjop.12731>
- Kresnantyo Adi Nugroho, Nanang Wioyono, Yunia Hastami, & Siti Munawaroh. (2022). Pengaruh Musik Gamelan terhadap Atensi pada Mahasiswa Kedokteran FK UNS (Kajian Neuroplastisitas). *Plexus Medical Journal*, 1(1), 1–9. <https://doi.org/10.20961/plexus.v1i1.4>
- Lemmens, J. S., Valkenburg, P. M., & Gentile, D. A. (2015). The internet gaming disorder scale. *Psychological Assessment*, 27(2), 567–582. <https://doi.org/10.1037/PAS0000062>
- Li, L. (2020). Fear of Missing Out (FoMO) and Gaming Disorder among Chinese University Students:

- Impulsivity and Game Time as Mediators. *Issues in Mental Health Nursing*, 1104–1113. <https://doi.org/10.1080/01612840.2020.1774018>
- Mahalingham, T., Howell, J., & Clarke, P. J. F. (2022). Attention control moderates the relationship between social media use and psychological distress. *Journal of Affective Disorders*, 297, 536–541. <https://doi.org/10.1016/J.JAD.2021.10.071>
- Meiliani, P. D., Indraswari, D. A., & Purwoko, Y. (2017). Pengaruh Lari Sebagai Olahraga Aerobik Intensitas Sedang Terhadap Atensi Mahasiswa Pendidikan Dokter Universitas Diponegoro. *Jurnal Kedokteran Diponegoro (Diponegoro Medical Journal)*, 6(2), 1043–1052. <https://doi.org/10.14710/DMJ.V6I2.18616>
- Mukti, D., & Wimbari, S. (2020). Pengaruh Mindfulness Meditation Training terhadap Atensi Selektif pada Siswa SMP. *Gadjah Mada Journal of Professional Psychology (GAMAJPP)*, 6(1), 30–46. <https://doi.org/10.22146/GAMAJPP.53189>
- Savaş, D. D. E., Yerlikaya, D., Yener, G. G., & Tanör, Ö. Ö. (2020). Validity, Reliability and Normative Data of The Stroop Test Çapa Version. *Turk Psikiyatri Dergisi*, 31(1). <https://doi.org/10.5080/u23549>
- Shenuski, T. (2022). A Causal Comparative Study of Principal Perceptions of Instructional Leadership Practices in One Central Florida School District. *Electronic Theses and Dissertations, 2020-*. <https://stars.library.ucf.edu/etd2020/1288>
- Sugiyono. (2017). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta.
- Thursina, C., Sutarni, S., Prabandari, R. Y. S., Sutomo, R., Machira, C. R., & Medikanto, A. R. (2021). Hubungan Internet Gaming Disorder dengan Gangguan Atensi dan Memori pada Siswa SMP di Daerah Perdesaan di Yogyakarta. *Callosum Neurology*, 4(1). <https://doi.org/10.29342/cnj.v4i1.94>
- Vercelly, E., Lotar Lejap, H., Pasifikus, R., Wijaya, C., & Keraf, M. K. P. A. (2022). Self-Regulated Learning and Online Game Addiction in College Student. *Journal of Health and Behavioral Science*, 4(2), 341–351. <https://doi.org/10.35508/JHBS.V4I2.6507>
- Zimmerman, B. J. (1989). *Models of Self-Regulated Learning and Academic Achievement*. https://doi.org/10.1007/978-1-4612-3618-4_1